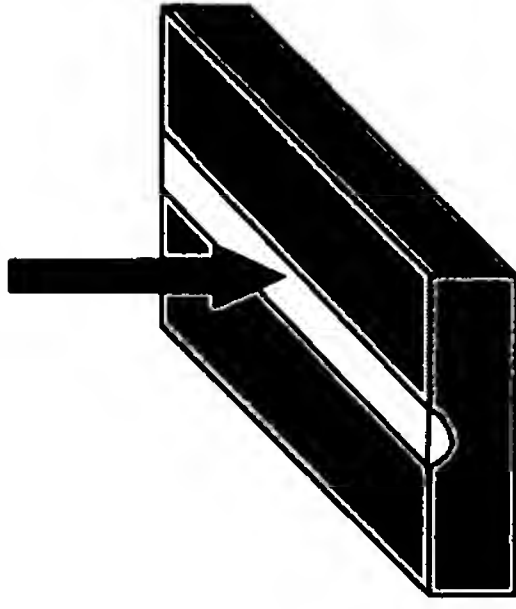


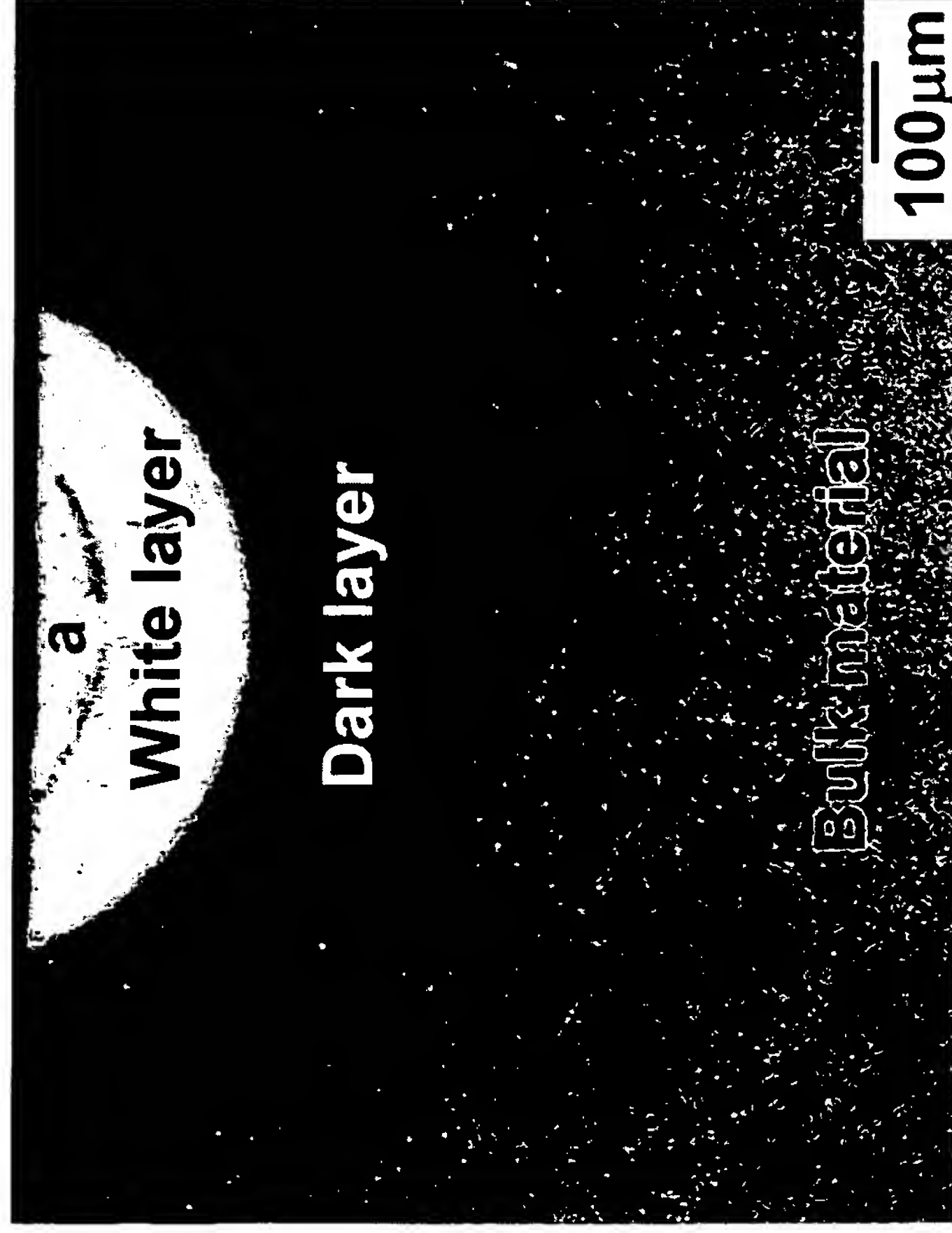
The micrograph of laser treated S55C surface

laser



300W
500mm/min
Duty 50%

$\alpha' \rightarrow \gamma$
quenched
 $\gamma \rightarrow \alpha'$

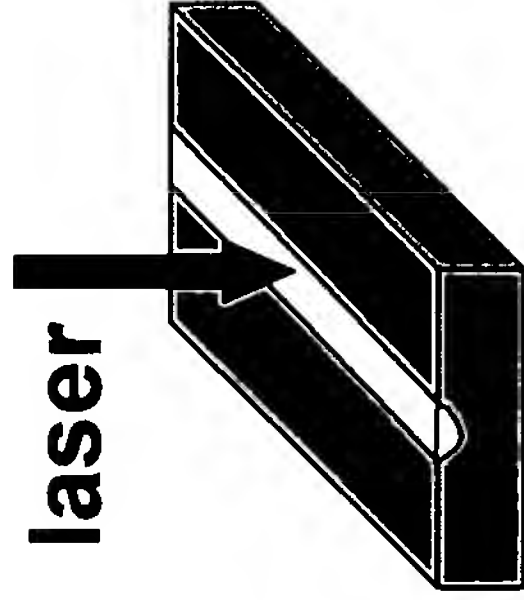


OM

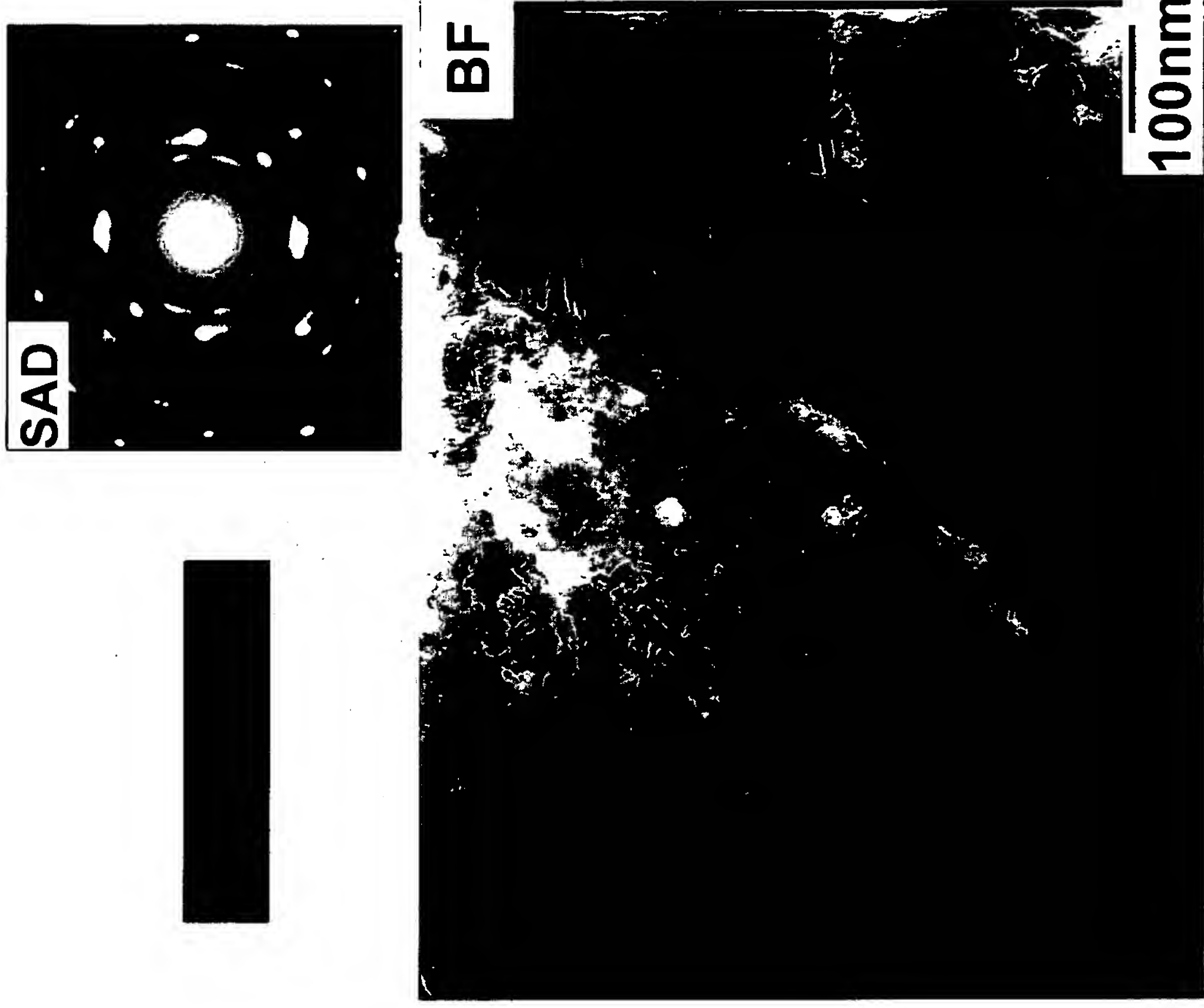


SEM

The TEM images of laser treated S55C surface

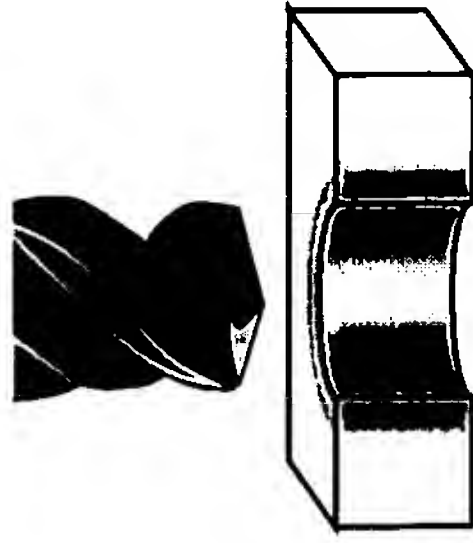


300W, 500mm/min
Duty 50%

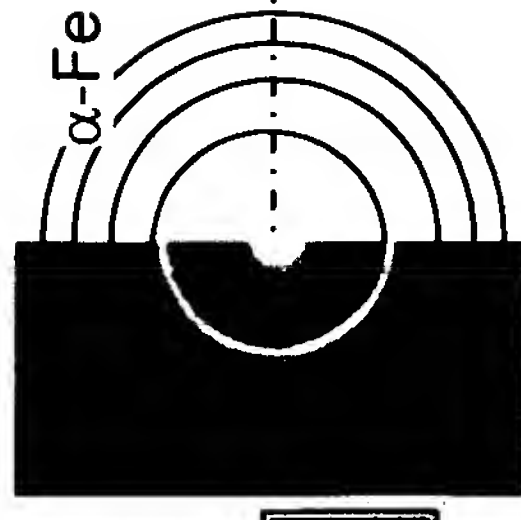


Laser treated surface

TEM images of the topmost surface generated by hard machining
in Fe-0.56%C steel with martensite structure



Feed rate: 0.05 mm/rev
Cutting speed : 80 m/min
Diameter of drill: 5.0 mm
Oil mist cooling



Nanocrystalline structure

